UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,809	01/09/2002	Bruce Michael Cassidy	SJO920010074US1 501.396US	5058

7590	01/03/2005		EXAMINER
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ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/042,809	CASSIDY, BRUCE MICHAEL
	Examiner	Art Unit
	Trisha U. Vu	2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 January 2002</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>36-55</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>36-55</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 April 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 36-55 are presented for examination.

Claim Objections

2.   Claim 41 is objected to because of the following informalities: "a signaled" (line3)

should be changed to "a signal". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 36, 41-43, 48-50, and 53-55 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Burkhardt, Jr. et al. (5,142,683) (hereinafter Burkhardt) in view of Petersen et

al. (6,665,673) (hereinafter Petersen).

As to claims 36 and 50, Burkhardt teaches a host messaging unit for allowing

asynchronous retrieval of a command from a host processor, the host messaging unit

comprising: a read controller (service agent 121), coupled to a bus (27), for determining

when a host command has been provided to a host memory and for asynchronously

retrieving the host command directly from a host memory (memory 111) via direct

memory access (col. 12, lines 56-68 and col. 13, lines 45-68); a write controller (service

agent 121), coupled to the bus, for asynchronously signaling a successful command

transfer from the host memory to the host messaging unit via direct memory access (erasing the address field 140) (Fig. 6 and col. 13, lines 64-68). However, Burkhardt does not explicitly disclose a validator coupled to the read controller for validating the retrieved host command. Petersen teaches a validator to validate the request retrieval (Frame Invalid molecule is provided if the request is invalid) (col. 14, lines 7-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a validator to validate the request retrieval as taught by Peterson in the system of Burkhardt to check for invalid commands and thus provide appropriate reaction.

As to claims 43 and 55, Burkhardt teaches a peripheral component interconnect device comprising: a device processor (services provider in processor 22); and a host messaging unit coupled to the device processor for facilitating communication between the device processor and an external device, the host messaging unit including: a read controller (service agent 121), coupled to a bus (27), for determining when a host command has been provided to a host memory and for asynchronously retrieving the host command directly from a host memory via direct memory access (col. 12, lines 56-68 and col. 13, lines 45-68); and a write controller (service agent 121), coupled to the bus, for signaling a successful command transfer from the host memory to the host messaging unit (erasing the address field 140) (Fig. 6 and col. 13, lines 64-68). However, Burkhardt does not explicitly disclose a validator coupled to the read controller for validating the retrieved host command. Petersen teaches a validator to validate the request retrieval (Frame Invalid molecule is provided if the request is invalid) (col. 14, lines 7-33). It

would have been obvious to one of ordinary skill in the art at the time the invention was made to include a validator to validate the request retrieval as taught by Peterson in the system of Burkhardt to check for invalid commands and thus provide appropriate reaction.

As to claims 41 and 48, Burkhardt further teaches the read controller comprises: a busmaster command engine (part of the service agent) for initiating the command retrieval from the host memory when the busmaster command engine receives a signal indicating host commands are available in the host memory (col. 7, lines 39-65, and col. 14 line 30 to col. 16 line 68).

As to claims 42 and 49, Burkhardt further teaches the busmaster command engine comprises a register programmable for indicating that the command is available to be retrieved from the host memory (col. 7, lines 39-65, and col. 14 line 30 to col. 16 line 68).

As to claim 53, Burkhardt further teaches initiating the command retrieval from the host memory upon receipt of a signal indicating host commands are available in the host memory (col. 7, lines 39-65, and col. 14 line 30 to col. 16 line 68).

As to claim 54, Burkhardt teaches an article of manufacture comprising: a program storage medium readable by a computer, the medium tangibly embodying one or more programs of instructions executable by the computer to perform operations for reducing bus transfer overhead between a host processor (processor 29) and a peripheral component interconnect device processor (processor 22), the operations comprising: determining when a host command has been provided to a host memory; asynchronously retrieving the host command directly from the host memory via direct memory access

(col. 12, lines 56-68 and col. 13, lines 45-68); and signaling a successful command

transfer from the host memory to the host messaging unit (erasing the address field 140)

(Fig. 6 and col. 13, lines 64-68). However, Burkhardt does not explicitly disclose

validating the retrieved host command. Petersen teaches validating a request retrieval

(Frame Invalid molecule is provided if the request is invalid) (col. 14, lines 7-33). It

would have been obvious to one of ordinary skill in the art at the time the invention was

made to include validating a request retrieval as taught by Peterson in the system of

Burkhardt to check for invalid commands and thus provide appropriate reaction.

4.   Claims 37, 38, 40, 44, 45, 47, 51, and 52 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Burkhardt, Jr. et al. (5,142,683) (hereinafter Burkhardt) in view of Petersen et

al. (6,665,673) (hereinafter Petersen), and further in view of Suh et al. (Pub. No. 2002/0161536)

(hereinafter Suh).

        As to claims 37, 44, and 51, the argument above for claims 36 and 43 apply.

However, Burkhardt and Petersen do not explicitly disclose the read controller comprises

a read clock for initiating the command retrieval from the host memory at predetermined

intervals. Suh teaches polling using a clock to initiate polling for data at predetermined

interval (paragraphs [0027] and [0040]). It would have been obvious to one of ordinary

skill in the art at the time the invention was made to implement polling at predetermined

interval as taught by Suh in the system of Burkhardt and Petersen to allow flexible

accessing to the memory as the intervals can be changed according to the preferences of

the service provider (paragraph [0040]).

As to claims 38 and 45, Suh further teaches the read clock allows programmable predetermined intervals (the periods can be changed according to the preferences of the service provider) (paragraph [0040]).

As to claims 40, 47, and 52, Burkhardt further teaches the write controller clears the host memory to inform the host that the host command has been read (Fig. 6 and col. 13, lines 64-68).

1.   Claims 39 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burkhardt, Jr. et al. (5,142,683) (hereinafter Burkhardt) in view of Petersen et al. (6,665,673) (hereinafter Petersen), Suh et al. (Pub. No. 2002/0161536) (hereinafter Suh), and further in view of Urui et al. (JP 61196613) (herein after Urui).

As to claims 39 and 46, the argument above for claims 38 and 45 apply. However, Burkhardt, Petersen, and Suh do not explicitly disclose restarting the predetermined interval after the command retrieval from the memory storage device. Urui teaches restarting the interval after the retrieval from the memory (polling the memory at a required time the data to be received is read (note the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include restarting the interval after the retrieval from the memory as taught by Urui in the system of Burkhardt, Ogawa, and Suh to avoid continuous polling where the reads in one poll might take greater than or approximately the same time with the predetermined interval.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
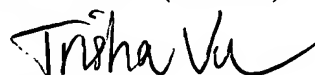
A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Trisha Vu whose telephone number is 571-272-3643. The

examiner can normally be reached on Mon-Thur and alternate Fri 8:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mark Rinehart can be reached on 571-272-3632. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trisha Vu
Examiner
Art Unit 2112

uv

SUMATI LEFKOWITZ
PRIMARY EXAMINER